

AMENDMENTS TO THE CLAIMS

Please cancel claim 18 without prejudice. Please add new claim 21.

1. (CURRENTLY AMENDED) A method for deinterlacing a picture, comprising the steps of:

(A) calculating a plurality of differences among a plurality of current samples from a current field of said picture, said differences being calculated along a plurality of line segments at a plurality of angles proximate a particular position between two field lines from said current field ~~field~~;

(B) generating a first sample at said particular position by vertical filtering said current field in response to said differences indicating that said particular position is a non-edge position in said picture; and

(C) generating a second sample at said particular position by directional filtering said current field in response to said differences indicating that said particular position is an edge position in said picture.

2. (ORIGINAL) The method according to claim 1, further comprising the step of:

checking said second sample against a plurality of
neighbor current samples from said current field proximate to said
5 second sample.

3. (CURRENTLY AMENDED) The method according to claim 2,
further comprising the step of:

adding said second sample to said current field in
response to said checking indicating that said ~~interpolated~~ second
5 sample is similar to said neighbor current samples.

4. (ORIGINAL) The method according to claim 2, wherein
step (B) is performed in further response to said checking
indicating that said second sample is dissimilar to said neighbor
current samples.

5. (ORIGINAL) The method according to claim 4, further
comprising the step of:

blending said first sample with a third sample from said
particular position in a neighboring field of said picture.

6. (ORIGINAL) The method according to claim 1, wherein
said angles comprise a plurality of first angles between 0 and 90
degrees noninclusive and a plurality of second angles between said

90 degrees and 180 degrees noninclusive relative to a horizontal
5 axis through said particular position.

7. (ORIGINAL) The method according to claim 1, further
comprising the step of:

generating a plurality of pad samples beyond a boundary
of said current field to supplement said current samples in
5 generating said differences.

8. (ORIGINAL) The method according to claim 1, further
comprising the step of:

adding a third sample from said particular position in a
previous field of said picture to said current field in response a
5 first determination to deinterlace only by temporal filtering.

9. (ORIGINAL) The method according to claim 8, further
comprising the step of:

generating a fourth sample at said particular position in
response to a second determination to deinterlace only by vertical
5 filtering.

10. (CURRENTLY AMENDED) The method according to claim 9,
further comprising the steps of:

generating a plurality of pad samples beyond a boundary of said current field to supplement said current samples;

5 checking said second sample against a plurality of neighbor current samples from said current field vertically adjacent to said second sample;

 adding said second sample to said current field in response to said checking indicating that said second sample is
10 similar to said neighbor current samples;

 generating a fifth sample by blending said first sample with said third sample in response to said checking indicating that said second sample is dissimilar to said neighbor current samples; and

15 adding said ~~third~~ fifth sample to said current field.

11. (ORIGINAL) A method for format conversion, comprising the steps of:

(A) reading a first field and a second field from a memory;

5 (B) generating a plurality of directional estimations based on said first field for a plurality of interpolated samples to be added into said first field to form a frame; and

(C) generating said interpolated samples using (i) temporal filtering based on said first field and said second field,
10 (ii) vertical spatial filtering based on said first field and (iii)

spatial directional filtering based on said directional estimations and said first field.

12. (CURRENTLY AMENDED) The method according to claim 11, wherein step (C) comprises the sub-step of:

generating said interpolated samples using at least one of (i) a weave ~~adaptive switching at a frame level~~, (ii) a bob ~~adaptive switching at a pixel level~~, (iii) ~~nonadaptive switching at said frame level~~, (iv) ~~nonadaptive switching at said pixel level~~ and (iii) a ~~(v)~~ blending of said temporal filtering and said spatial directional filtering.

13. (CURRENTLY AMENDED) The method according to claim 11, further comprising the step of:

performing ~~at least one of~~ a horizontal stationary edge check ~~and a stationary pixel check~~ based on a third field read from said memory.

14. (ORIGINAL) The method according to claim 11, further comprising the step of:

motion compensating said second field prior to generating said interpolated samples.

15. (ORIGINAL) The method according to claim 11, further comprising the step of:

vertical spatial filtering said second field prior to generating said interpolated samples.

16. (ORIGINAL) The method according to claim 11, further comprising the steps of:

vertical spatial filtering said second field; and

5 motion compensating said second field prior to generating said interpolated samples.

17. (CURRENTLY AMENDED) The method according to claim 11, wherein generating said directional estimations uses at least one of (i) a horizontal window having no greater than four field lines of said first field to estimate a ~~present~~ presence and a
5 direction of a high contrast edge, (ii) a plurality of reduced samples from said second field each having a reduced bit-depth, (iii) a plurality of moving averages of directional sample difference metrics.

18. (CANCELED)

19. (CURRENTLY AMENDED) The method according to claim 11, wherein each of said first field and said second field ~~consist~~ of comprise a plurality of luminance samples.

20. (ORIGINAL) An apparatus comprising:
means for storing a first field and a second field;
means for vertical spatial filtering said second field;
means for generating a plurality of directional
5 estimations based on said first field for a plurality of
interpolated samples to be added into said first field to form a
frame; and

means for generating said interpolated samples using (i)
temporal filtering based on said first field and said second field
10 after said vertical spatial filtering and (ii) vertical spatial
filtering based on said first field.

21. (NEW) The method according to claim 11, further
comprising the step of:

performing a stationary pixel check based on a third
field read from said memory.